...DRILLER

'Hands Across The Cable'

Operator Don Brown as he planned to drill a 14-inch, 4000-foot well near Bakersfield, Calif. The rig is a Bucyrus-Erie 24-L owned by Brown's employer, J. J. Dale.

DECEMBER, 1949

Check The New 20-W's 'BIG TEN' FEATURES...

...They Mean Faster, More Profitable Drilling for You!

1. GEAR-DRIVEN BULL REEL — Friction-clutch controlled. Free wheeling, too, for rapid tool running.
2. BOX-SECTION DERRICK — All steel, all-welded, 32-foot single-piece, tapered box-section derrick with built in jackscrew.
3. POWER DERRICK HOIST — Friction driven power hoist permits quick setups and knock downs, cuts costly down-time.
4. SLACK LINE HOLDER — Spring-loaded shoe on heel sheave prevents excessive slack on bull reel, reduces drum and cable wear.
5. COUNTER WEIGHTED SPUDDING GEAR — Prevents dead centering of pitman.
6. AUTOMATIC FEED — Vernier control on bull reel brake eliminates hand feeding.
7. ENGINE TAKE-OFF CLUTCH — For added convenience and safety, there's a disc type power take-off clutch in the engine housing.
8. TOOL CARRYING EQUIPMENT — Carrier bracket at derrick foot plus chain "boomer" keeps tools in place on job-to-job moves.
9. GEAR DRIVEN CASING REEL — Offered as optional equipment at a low extra cost, this free wheeling reel permits handling heavy casing loads.
10. CLUTCH CONTROLLED CATHEADS — Two 8" diameter cat heads, one for each side of rig, are available as special equipment.

The new Bucyrus-Erie 20-W, successor to the highly popular 21-W, is a small rig with big rig ideas. Hard hitting, tough, and smooth working, it has all the qualities of a true All-American. The long proven features that have made Bucyrus-Erie drills outstanding have been retained, and a "Big Ten" lineup of new, tried and tested features has been added. Call your plays with the new 20-W and watch it hit pay dirt for you on your well drilling jobs! Write for bulletin today!

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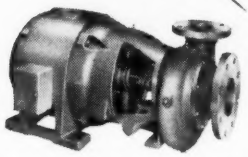
76W490

BUCYRUS-ERIE COMPANY, South Milwaukee, Wisconsin

enhanced appearance...

means more dollars for you

Make *pride of ownership* one of your selling assets. The latest model of the Deepwell Turbine Pump, pioneered by BJ in 1901, is a clean design ... it's beautiful. In your proposals, offer your customers that *extra quality* ... beauty above ground ... as well as BJ's guaranteed performance.



BJ Bilt-ons are compact units with motor and pump close-coupled on a common shaft. Operate in any position. Ideal for portable service.

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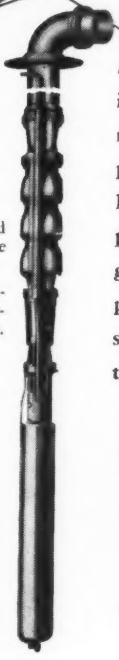

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Anderson who hit upon the idea of u or to speed up his well jobs and to br ens of outside projects as well.

LET'S look back to the Spring of 1947. An acute casing shortage is general throughout the nation's water well drilling industry, causing drilling contractors severe hardships and making it impossible for many to carry on their well drilling operations. On the other hand, housing construction has reached an all-time high.

• Equipped with a ¼-cu. yd. clamshell bucket, the crane-excavator digs drainage ditch for new well pit.

Carefully considering the situation as it then existed, J. T. Anderson, a driller from Morris, Ill., and present president of the Illinois Water Well Drillers Association, came up with a solution to the problem that has meant a growing business and added profits for him ever since. At the time, Anderson had been giving a great deal of thought to his well drilling business in general and to well pumps in particular. Many old wells in his section of the country used the old-fashioned windmill for power. The windmill tower was used to pull long strings of drop pipe. But the newer wells with electric water systems were difficult to pull, when using a tripod or hand-winch, and difficult to re-install, too.

Wells Nearer to Homes

Anderson was also aware that wells were being moved nearer to the farm home and that windmills were being gradually replaced by modern electric pumps and water systems. Maintaining a pump, he realized, was becoming more and more a problem, one for which he

needed a solution if he were to provide a complete well service for his customers.

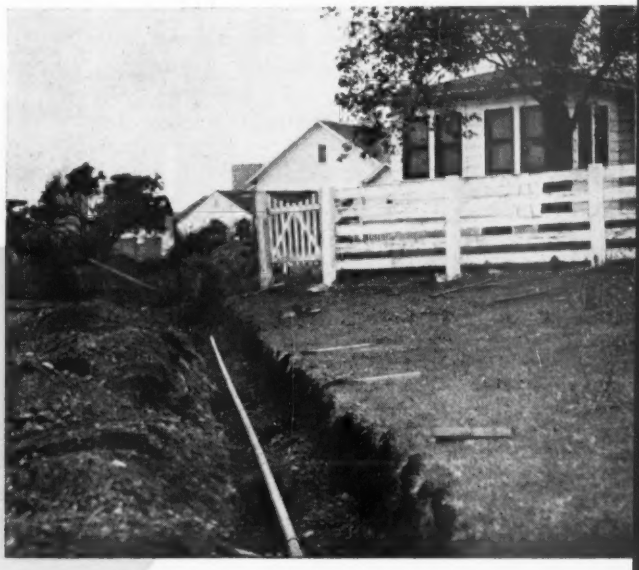
But the casing shortage was still there and his available supply wasn't equal to the demands of his water well drilling business. So, Anderson began looking around for a crane-excavator, a machine not only capable of speeding up his well jobs when business picked up but one that could handle "outside" jobs and bring in extra profits in the meantime. After studying available machines, the Illinois contractor decided to buy a Bucyrus-Erie H-2 Hydrocrane, a hydraulically-operated, mobile 2-ton crane-excavator.

(Editor's Note: The Hydrocrane was first produced during the last war whereupon orders were placed by the Navy, the Air Corps, the U. S. Army Engineers, and the Ordnance Department. Civilian production was started early in 1946. The model H-2 mounts on 1½-ton trucks, and is designed for small scale jobs which normally require slow and costly hand labor.)

"In the space of 2½ years," Anderson said, "the Hydrocrane has more than paid for itself on outside jobs alone." The volume of his well drilling has increased likewise, so much so that he has hired two additional men to handle the installing and repairing of pumps. "Possession of the Hydrocrane has been a determining factor in landing some jobs," he stated, "especially when a customer wants complete service in one operation."

Two Units Used on Jobs

Anderson uses the H-2 and a Keystone 70 rig in his well drilling work. The Keystone drills the wells, which run anywhere from 30 to 650 feet in depth and are usually 6 inches in diameter, and then the Hydrocrane moves in to complete the job. The Illinois contractor often uses the H-2 for digging well pits, installing septic tanks, digging ditches for drainage purposes and for water pipe, and for setting heavy pumps after he has drilled a well. The practical limits for profitable Hydrocrane



• A section of the 400-ft. long ditch, dug by the crane, which connects the farm's two wells. Lengths of 2½-inch steel pipe were hand laid.

• Anderson used the truck crane to dig this excavation for a storage tank. The tank is 18 feet long and 4 feet in diameter.

per yard. This pit was $1.)

The new well, designed to serve as the main water supply for the large farm, is 400 feet from the present 404-ft. well, which will now be used as an auxiliary. Anderson had to dig a ditch to connect the two wells. This ditch holds 335 feet of 5-in. tile which serves as a drain for the new well pit, 400 feet of 2½-in. steel pipe to handle the flow of water from one well to the other, and the electrical conduits needed to furnish power for operating the pump.

Digs Ditch With Crane

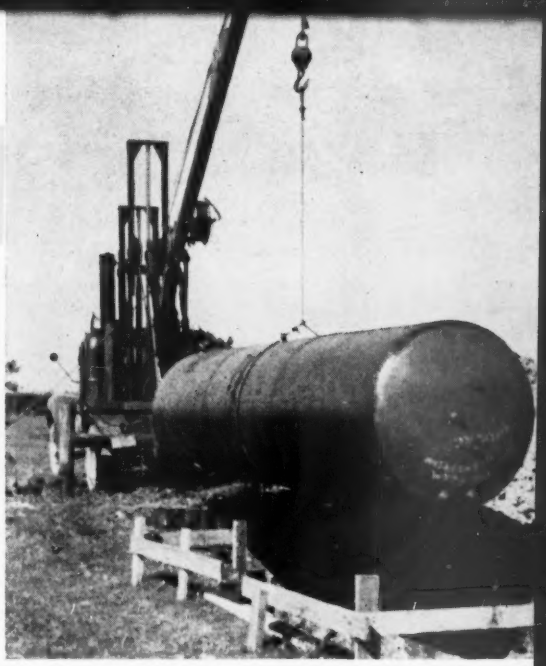
In this stage of the job, Anderson used the crane, equipped with a ¼-cu. yd. clamshell bucket, to dig all the ditch except the last 60 feet which was inaccessible due to a fence and trees in the house yard. This

operation on these jobs were outlined by Anderson when he stated "all jobs are practical and most all economical down to the smallest scale job."

On a recent job Anderson put down a 480-ft., 6-in. well on the Circle A Hereford Farm near Morris. After test pumping the well, he was given the go-ahead on construction of the well pit, digging of a 350-ft. drainage ditch, and laying 2½-in. pipe from the new well to the farm's regular distributing system.

In digging the well pit, Anderson used the truck crane exclusively. The pit, lined with concrete building blocks, is eight feet square, seven feet deep, and 80 inches high. The Hydrocrane dug it in three hours. (On a small excavation like this Anderson ordinarily gets $1 to $1.50

• Pump bowl assembly and tail pipe are suspended while Anderson adjusts crane boom angle so that line will be plumb with well.



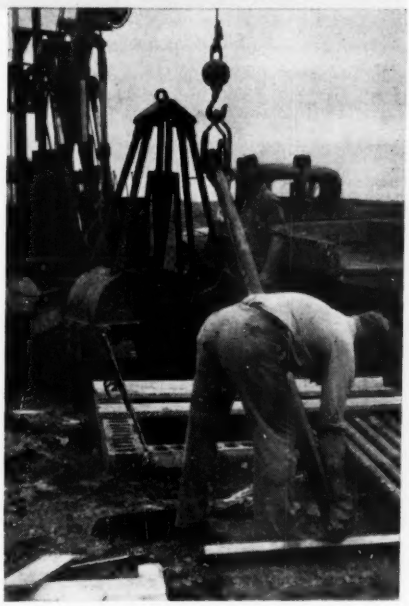
• Crane lowers the 1,800-gal. storage tank into a hole alongside site of the new well pit. Tank will be buried two feet underground.

final section was hand dug and required 32 man hours. Anderson indicated the job would have taken about two hours with the Hydrocrane.

The Illinois driller also installed an 1,800 gal. storage tank at the well site, using the crane. It took only two hours to dig the excavation for the tank which is 18 feet long and 4 feet in diameter.

The final operation on this particular job was the setting of a 5-hp. Deming Figure 4700 vertical deep well turbine pump on the well. Prior to purchasing the truck crane, Anderson ran a manually operated chain hoist and tripod or a pole and hand-winch for this job, which ordinarily took a day or more to complete. "With the Hydrocrane," he said, "it takes three hours."

• While Johnny Anderson handles crane controls, helper Ed Peterson maneuvers section of column pipe into position for lowering into well.



Anderson has also found the crane saves him considerable time in pulling pumps for repairs and re-installing them in the well, a job formerly done with a tripod or hand-winch. Before buying the machine, Anderson used a block and tackle arrangement, drawn by a tractor, to lift drop-pipe out of a well that was under a windmill. The job took at least a day while the H-2 handles it in three hours.

Crane Handles Many Jobs

The crane-excavator has helped Anderson handle other well drilling jobs, too. A double-acting hydraulic ram permits extending or retracting the boom at will regardless of the boom angle, a feature which has proved valuable to Anderson in erecting and repairing windmills. Using

(Continued on page 26)

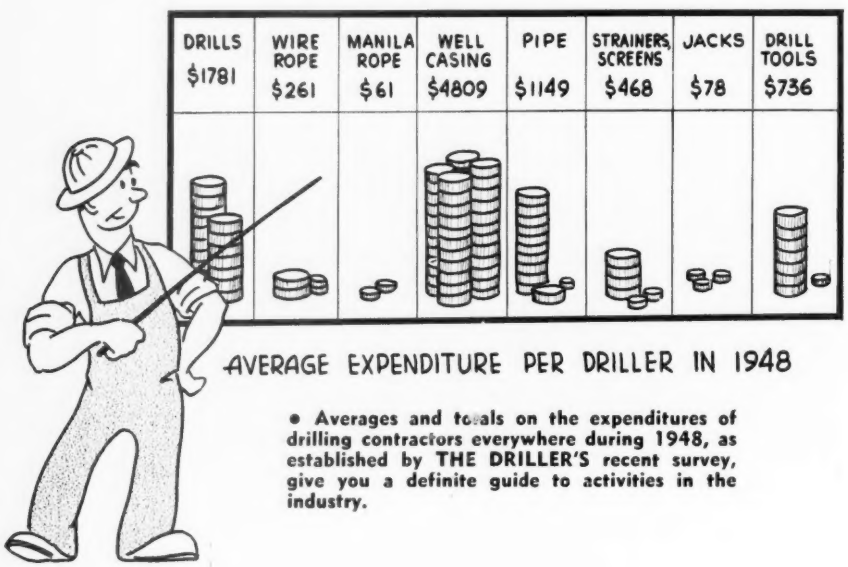
Report From the Nation's Water Well Drillers

A detailed summary of the approximate expenditures made by drilling contractors throughout the country in 1948 as shown in their replies to THE DRILLER'S industry-wide survey.

IN the November issue we published a condensed summary of some of the most important statistics shown by replies to the 5,850 questionnaires mailed drilling contractors on *The Driller's* domestic circulation list as of May 12, 1949. We give here more detailed information on the amounts the drillers spent for supplies in 1948. As in Part I of this report, total equipment purchases for the magazine's entire readership were obtained by taking the average of the answers reported for each question and projecting them to the 6,444 water well drilling contractors on our mailing list as of Aug. 28, 1949.

A complete tabulation of the 733 replies received, representing a response of 12.5%, shows that 234 new drill purchases were reported for 1948 at a total cost of $1,305,534, an average of $1,781 per drill. Going a step further from these figures, a carefully prepared estimate was made, an estimate that showed a total of 2,062 new drill purchases for 1948 at a total cost of $11,476,764. (In computing the total of 234 new drill purchases, a blank opposite the question was tabulated as zero. The

(Continued on page 25)



• Averages and totals on the expenditures of drilling contractors everywhere during 1948, as established by THE DRILLER'S recent survey, give you a definite guide to activities in the industry.

• Water flows steadily from opening of "Wonder Well."

Artesian Wells Common In Michigan City Area

PRODUCING artesian wells in some sections of the country is extremely difficult, but not in the vicinity of Michigan City, Ind. There, a good underground water supply, much of it with an artesian head, lies fairly close to the earth's surface. When it has been tapped by drilling, the result often has been a flowing well.

One such well, called the "Wonder Well," is located on a farm, now known as the "Wonder Well Farm," about 3½ miles southeast of the city. The farm was formerly owned by F. Beaumont, Chicago, whose brother used an auger to sink the hole. He is reported to have augered 40 feet through sand and sandy soil, and to have driven the pipe through about 10 feet of clay when water broke out around the casing. An attempt was made to set 2-in. casing, and then 3-in., but without success. The casing was then removed from the well and it is flowing, as from a spring, from an opening several feet wide.

According to T. M. Kingsbury, head, Ground Water Section, Division of Water Resources, Indiana Department of Conservation, there appears to be a zone of flowing wells three to four miles southeast of Michigan City. In the region south of this zone is a range of hills, an arm of the Valparaiso moraine. Just southeast is an area known as the summit which is reported to be the highest point in LaPorte County. The land surface continues to slope to the north for about a mile beyond the flowing well zone but ground water conditions apparently are different both to the east and west of this area of flowing wells.

As far back as the Fifth Annual

(Continued on page 23)

THE DRILLER

A JOURNAL FOR WATER WELL DRILLERS

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El Paso Studies Well Recharging

SOME research was done in 1948 and 1949 to determine the feasibility of artificial recharge in the El Paso, Tex. area, according to a report by C. R. Follett in the monthly water bulletin of the U. S. Geological Survey for September. In the series of field tests, Follett indicated, treated water from the Rio Grande River was injected into a well in the Montana field at a rate of 1,060 gpm for 15 days. Later, water was injected at the rate of 550 gpm for three days and then increased to 700 gpm for nine days.

"The artesian pressures in nearby wells were observed to rise substantially," Follett stated. "Computations were then made to determine the effect of possible additional artificial recharge. If artificial recharge with water is found to be economically feasible, river water can be stored during winter months for use during the period of heavy pumping in the summer, and the increased pressure in the reservoir will retard the ingress of salt water."

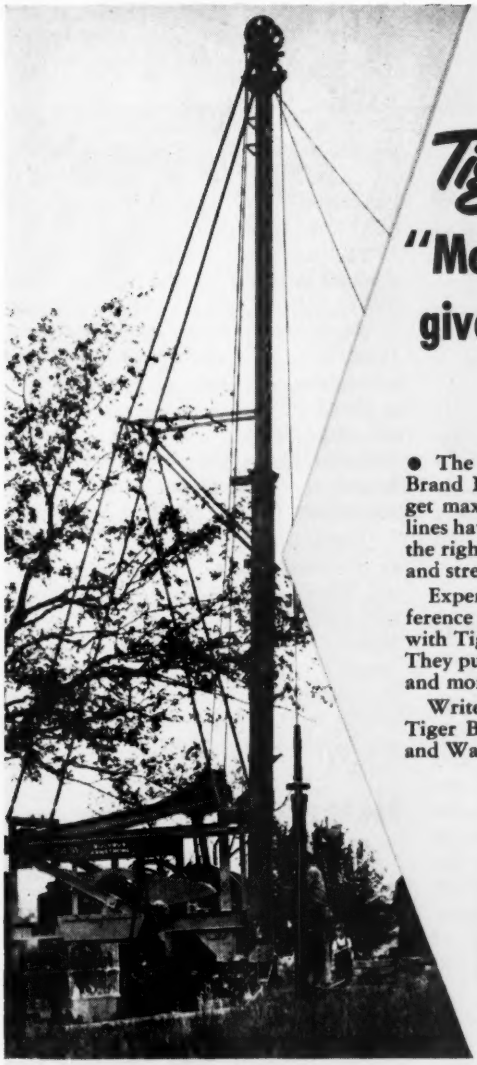
Water Supply Near Normal in Sept.

THE general trend in water supplies was toward normal during September, according to the monthly water bulletin issued by the U. S. Geological Survey, because no major floods occurred in any section of the country and because drought conditions eased in some areas of the Northeast. There, some improvement in surface-water supplies was noted, but ground-water levels in many areas are far below normal.

In New Hampshire, the bulletin stated, water levels in the well at Auburn were little higher at month-end than a year ago, the minimum September of record. In Connecticut, water levels in most wells were slightly below normal.

In the southeastern states stream flow continued excessive, mostly owing to carryover from the high water resulting from the hurricane of late August. Ground-water levels rose to seasonably record-high levels in western North Carolina. The stage of the Baldwin well, near Blantyre, was 11.36 feet on September 30, a contra-seasonal increase of 0.60 feet during the month, and 1.77 feet above the previous maximum stage of record for that date.

Water supplies in the West averaged somewhat below normal. Ground-water levels in areas of heavy pumping generally rose as demands decreased with the end of the irrigation season.



Tiger Brand

"Mor-Spring" Lines give more footage per day

● The soft, smooth action of Tiger Brand Lines is just what you need to get maximum footage per day. These lines have been specially designed with the right combination of "springiness" and strength to give long service.

Experienced drillers can tell the difference immediately when they rig up with Tiger Brand "Mor-Spring" Lines. They put new life into the old machine and more dollars into your pocket.

Write for our booklet on American Tiger Brand Wire Lines for Oil, Gas and Water Wells.

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UNITED STATES STEEL

Oklahomans Meet on December 9-10

L. J. Clarke, secretary, Oklahoma Water Well Drillers Association, reports that an interesting and instructive program is taking shape for the association's first annual meeting, to be held on December 9 and 10. Headquarters for the 2-day assembly will be the Extension Study Center, University of Oklahoma, Norman. This is the site of the former Navy Base, located about a mile north of the city. Interested drillers and manufacturers are invited to attend.

Martin Named Head of Kansas Group

MORE than 100 persons—drillers, industrial representatives, and members of interested state and federal agencies—attended the second annual convention of the Kansas Water Well Drillers Association in Dodge City, October 14 and 15. Representatives from 34 manufacturing and supply companies were present to display the latest type of drilling equipment and tools, and supplies for water wells.

Ward Perkins, Chamber of Commerce Secretary, welcomed the group to Dodge City. E. C. Reed, associate state geologist of Nebraska, gave a discussion on the purpose and value of a drillers' association.

V. C. Fishel, engineer in charge of the Kansas district, discussed the State and Federal geological surveys' cooperative ground-water program in southwestern Kansas and showed slides concerning ground-water supplies in that area. The group was shown movies on the manufacture of wire rope and on the operation of submersible pumps. A banquet was held Friday night.

The Saturday morning session opened with a talk by Dwight Metzler, chief engineer for the Division of Sanitation of the State Board of Health. Mr. Metzler gave the history of the search for pure water and explained some of the modern methods of protecting water supplies from contamination and the reasons for Board of Health recommendations regarding proper well construction.

The following officers were elected at the business meeting: L. H. Martin, Larned, president; G. L. Weishaar, Scott City, vice-president; Hazen Sears, Paola, secretary-treasurer; James Jungmann, Topeka, director for northeast Kansas; and L. M. Waddell, Garden City, director for southwest Kansas.

Districts Set Up In North Carolina

AT A MEETING of the Board of Directors of the North Carolina Well Drillers Association, held in Charlotte on Oct. 29, the board members decided to divide the state into two districts — the eastern and the western district with the line running north and south through Winston-Salem with the Winston-Salem drillers in the western district. R. O. Heater, Raleigh, was appointed district governor of the eastern district and Ned Salley, Hickory, district governor of the western district.

The board also decided that the association's 1950 convention will be held on September 22 and 23 at the

Selwyn Hotel in Charlotte, provided that these dates are agreeable to the hotel's management.

So. Cal. Drillers Re-elect Officers

MEMBERS of the Water Well Drillers Association of Southern California and their guests held their annual membership meeting in the Desert Room of the Alexandria Hotel in Los Angeles, October 1. Manager T. M. Carroll presided.

The business session included a comprehensive report by Carroll on the association's affairs and the progress made during the past year. Carroll stressed the importance of obtaining contractors' licenses, and using written contracts for work to be done. He also gave detailed information regarding legislation that had been enacted in the 1949 State Legislature pertaining to well drilling.

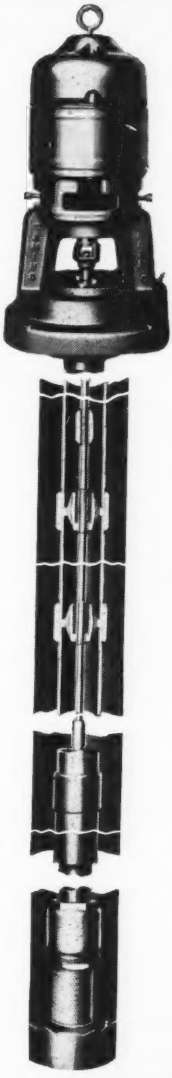
Members of the association's executive committee were all re-elected to office for 1950. They are: W. D. Edgbert, chairman; T. M. Carroll, manager; Mrs. Ludie Oblinger, secretary-treasurer; and L. Barber, R. P. Mogle, H. L. Hall, C. Wilson, C. J. Longwell, and J. E. Wright, Jr.

Bi-Monthly Meet Held in Illinois

THE regular bi-monthly meeting of the Illinois Water Well Drillers Association was held September 11 at the Hotel Kewanee in Kewanee, Ill. Inclement weather cut down anticipated attendance and only about 20 drillers and wives were present.

Members discussed general business and passed an amendment to their constitution making it possible for future applicants for membership

THE DEMING "MINUTURB"



(Fig. 4701)

For Deep Wells

Designed for wells where the underground water supply is approximately 200 feet, or less, from the surface, the Deming Figure4701"MINUTURB" is a complete "packaged" unit, ready for easy installation. (No extras to buy. No cutting or fitting.)

Motor and discharge head only are above ground. Moving parts in the well are the carefully balanced, bronze impellers and the drive shaft. Bowl assembly is designed for 4-inch or larger wells. Goodrich cutless rubber bearings, located at 5-ft. intervals in the column pipe, are self-lubricating from the water being pumped. The Deming "MINUTURB" is sold either as a complete pump or as a complete water system. Capacities range from 900 to 4800 gallons per hour. Write for complete information. THE DEMING CO., 512 Broadway, Salem, Ohio.

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to be appointed by the secretary subject to the approval of the board of directors.

The Illinois drillers decided to hold their next annual convention during late January or early February of next year. Place of the convention was not definitely fixed, but the members decided to meet either in Joliet or Springfield, depending on the availability of hotel accommodations.

Northern Calif. Holds Convention

THE first annual convention of the Water Well Drillers of Northern and Central California, sponsored by Associated Drilling Contractors, was held September 23 in the Rodeo Room of the Hotel El Rancho, Sacramento, Calif. Approximately 100 members were present.

After registration proceedings were completed, John M. Haley, State Department of Water Resources, addressed the drillers on "Recent State Legislation With Reference to the Drilling of Water Wells." He was followed on the program by Ed Ford, State Contractors License Board, who spoke on the "Functions of the State Contractors License Board."

Other subjects discussed during the convention were: "Factors Which Necessitated Anti-Pollution Legislation" by Assemblyman Randal F. Dickey; and "Your Organization" by J. D. Lynch, chairman, Board of Directors, Associated Drilling Contractors.

Four Appointed to Myers' Sales Force

FOUR new sales representatives have been appointed by the F. E. Myers & Bro. Co., Ashland, Ohio, manufacturers of pumps and water systems. F. W. Steinle of Meadville, Pa., has been assigned to contact Myers dealers in North and South Carolina under the supervision of District Manager H. T. White. L. I. Wingert of Caneadea, New York will cover West Virginia and a small portion of Maryland under the direction of District Manager J. E. Tice.

Two special canvassers have been assigned to assist district managers in the western territories. C. R. Bartley was assigned to California, Oregon, Washington, Arizona, New Mexico, part of Idaho and Nevada and British Columbia under the direction of District Manager C. Ross Jordan. D. R. Richards will assist District Manager F. F. Cunningham in Arkansas, Louisiana, Oklahoma, and Texas.

The announcement by C. D. Leiter, Myers domestic sales manager, of these appointments was made at the 1949-50 sales conference of the F. E. Myers & Bro. Co. held at Ashland September 26 to 30 inclusive.

Pump Makers Plan '50 Sales Program

THERE is a potential market for nearly a million electric farm pumps and water systems in 1950.

This was the challenge offered to manufacturers, dealers, and distributors by Robert T. Jones, manager of the rural sales department, Pennsylvania Power and Light Co., at the annual meeting of the National Association of Domestic and Farm Pump Manufacturers in the Sherman Hotel, Chicago, October 7.

The overall program and timetable for National Water Systems Month, May, 1950, were discussed and approved at this meeting. All members present agreed that the first special emphasis period in May, 1949, proved very successful in boost-

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NOW your customers with DEEP as well as shallow wells can cash in on the low-cost, trouble-free performance of a Jacuzzi Jet Pump. Already on thousands of farms across the nation, the new Jacuzzi Jet pumps are rolling up records for efficiency and economy on wells to 200, 300, 400 — even 600 feet. And to meet demand, Jacuzzi has stepped up production . . . opened new factory branches to bring you faster, local service from coast to coast.

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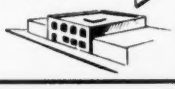

Originators and world's largest manufacturers of injector-type pumps.

For complete information, write office nearest you.

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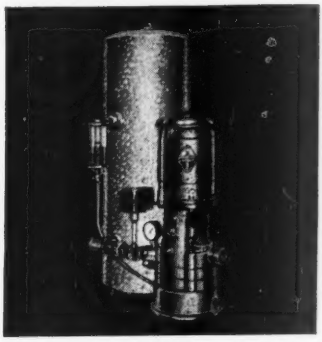
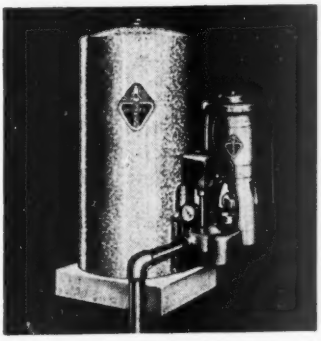


FOR DEPTHS TO 600', Jacuzzi selective stage discharge injector-type pumps with capacities to 13,000 gallons per hour.

FOR DEPTHS TO 40' AND GREATER, Jacuzzi Speedi-Prime injector-type pumps and water systems with capacities to 2400 gallons per hour.



FOR SHALLOW WELLS, Jacuzzi Ever-Prime injector-type water systems with capacities to 680 gallons per hour.

ing sales of electric water system equipment. The plan for 1950 will be amplified and spread out to do an even more aggressive job of merchandising running water under pressure.

Stresses Sales Action

Speaking on the subject of "Merchandising the Water System," Mr. Jones said that "sales action taken by manufacturers, distributors, jobbers, dealers, and power suppliers, not preliminary surveys, will determine the number of water systems sold in 1950. We can reach a peak of 800,000 water system sales in 1950, if everyone concerned with the selling of water systems makes up his mind to do that job."

The following officers were reelected at the meeting: H. R. Lafferty, vice-president of Red Jacket Mfg. Co., Davenport, Iowa, president; D. L. McDonald, president of A. Y. McDonald Mfg. Co., Dubuque, Iowa, vice-president; and J. P. Curtin, vice-president of George D. Roper Corp., Rockford, Ill., treasurer.

Members of the Executive Board include the newly-elected officers as well as: G. R. Deming, president of The Deming Co., Salem, Ohio; Robert M. Hula, vice-president of Clayton Mark and Co., Evanston, Ill.; J. C. Myers, president of the F. E. Myers & Bro. Co., Ashland, Ohio; H. T. Park, president of Flint and Walling Mfg. Co., Kendallville, Ind.; and Herbert C. Angster, executive secretary and director, Chicago.

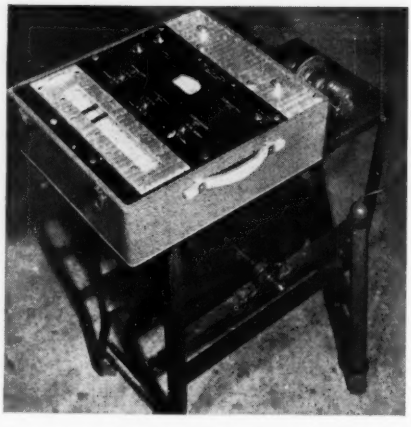
Bays Introduces New Logging Device

A UNIQUE portable electrical logging device especially designed for water wells has been developed by the instrument division of Carl A. Bays and Associates, Urbana, Ill., geological and geophysical engineering firm.

The unit is designed to be carried in an ordinary passenger car and consists of two parts—a reel containing the logging line and electrode, with counter for measuring depth, and the measuring instrument in a portable, synthetic leather case. The handlogger runs both standard potential and resistivity curves, and is direct reading. Curves can be drawn up from the readings along with other well information so that drillers and operators can tell the full story of a well logging job.

Experimental work with the units in many states and abroad has proven the value of the information obtained from both rotary and cable tool holes. The logs provide useful data on new wells to guide their completion and have been used in both cased and uncased old holes for repair work. The standard model is designed for wells 500 feet or less in depth, but modifications can be made of the unit to meet other conditions. A descriptive folder will be furnished in response to inquiries directed to Instrument Division, Carl A. Bays and Associates, P. O. Box 189, Urbana, Ill.

• The Handlogger, a portable electrical logging device, is designed for wells 500 feet or less in depth.



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When you choose an A. O. Smith Pump, you know it is *all* A. O. Smith from motor to strainer—SMITHway all the way down. You can be sure that the sum of A. O. Smith's 75 years of experience has been engineered into *every* pump part, to give you a superiority you can depend on under the toughest operating conditions.

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Bowls are precision-machined from hard, close-grained cast iron, fitted with smooth, streamlined diffusion vanes contoured for maximum efficiency. Bronze impellers, closed or semi-open, are dynamically and hydraulically balanced.

"Tailor-Made" for Each Job. Complete interchangeability of major assemblies lets you select the right combination of driver, column pipe, lubrication, and impeller to fit each pumping application. You have an application-engineered pump exactly right for each job.

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FROM THE MAILBAG

This page is open to any of our readers having questions to ask relating to drilling, driving pipe, dressing bits, etc. All letters will be answered promptly by experienced drillers and engineers who are qualified to give intelligent advice on these subjects. We will publish as many letters of general interest as space will permit. Address: The Driller, South Milwaukee, Wis.

Cement Grout To Shut Off Sulphur Water

Dear Sir:

Would you please tell me what portion of cement, sand and rock to use in sulphur water to shut out the bottom level from the fresh water level on top? I know the level of each is about 35 feet between the two.
W. N. R. Tennessee

Unfortunately, you did not state the diameter of the hole and the size of the casing. It may be possible to shut off the sulphur water by sealing the casing by cementing if there is sufficient annular space between the casing and the diameter of hole.

Proper preparation of the cement grout mixture is of importance. The best results are obtained by the use of neat cement and water in the ratio of one bag (cu. ft.) of fresh cement, free from lumps, to 4½ to 5 gallons of clean water, or if necessary, up to 5 gallons are permissible. It is important that the grout material be placed in one continuous mass from the bottom of the annular space to be grouted upward.

The casing or pipe should be pulled back about two feet from the bottom and cement poured inside the liner from the top. A mixture of clay and mud should be poured on top of the cement to force it down the inside of the casing and up around the outside so as to completely fill the annular space.

If the cement is set the clay mud mixture may be bailed out and any plug remaining in the bottom of the casing can be drilled out.

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This simple system does away with bookkeeping worries yet makes all the pertinent details of your business quickly available.

Attach a dollar bill and this ad to your letterhead or business card for DRILLER'S FIELD RECORD booklet, sample sheets and other pertinent information.

Mail to:

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BELLE MEAD, N. J.

Houston Well Sets Municipal Record

THE deepest and largest producing water well ever drilled in Houston, Texas, was recently completed by Texas Water Wells, Inc. The well, known as the East End No. 3, is of gravel-wall construction and is believed to be one of the largest and deepest wells of this type in the country.

A test hole was drilled to 2,500 feet and then reamed to 30 inches

EXPAND YOUR BUSINESS AND YOUR PROFITS...

With a Bucyrus-Erie Hydrocrane

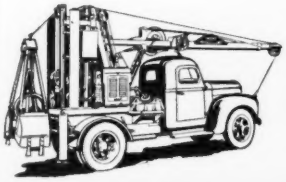
Take a look at the versatile Hydrocrane — and at the profit possibilities it holds for you! This handy crane-excavator can speed your well jobs . . . can help you provide more complete service to customers . . . can bring in extra profits from dozens of "outside" jobs. It's fast moving, easy to set up, easy to run. It's completely hydraulic in operation, an ideal machine for expanding your business and your profits.

It's built in two sizes: 2-ton ¼-yard H-2; 3-ton ⅜-yard H-3. To get more information, fill in and mail the coupon (below) today!

BUCYRUS-ERIE HYDROCRANE DIVISION
SOUTH MILWAUKEE, WISCONSIN

LOOK at all the things you can do:

- **Put in septic tanks**
- **Dig ditches for drain and water pipes**
- **Dig well pits**
- **Set pumps**
- **Load and unload pipe and casing**
- **Dig footings for silos**
- **Erect and repair windmills**
- **Place oil and gas tanks**
- **Handle miscellaneous construction jobs**
- **Earn money on rentals**



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Get the facts. Ask your local Pump or Engine Manufacturer's agent for details. Write us for Free illustrated folder showing installations all over the U. S. on farms and in industry.

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to a depth of 585 feet and 22 inches to the final depth of 2,365 feet. Upon completion of casing setting, the well was hydraulically gravel-packed with 270 cubic yards of filter sand. The well was then washed and developed.

The well far exceeded the city's specifications and on a 96-hour pumping test at 2,526 gpm, the well had a specific capacity of 46.22 gallons per foot of drawdown and the sand content was .007 oz. per 1,000 gallons of water. Static water level was 196 feet.

The Houston specifications called for a guaranteed specific capacity of 25 gallons per foot of drawdown and a test pump capable of pumping 2,250 gpm.

Deep Well Tested

THE September issue of *The Driller* carried a news item on driller Bob Myers and the 11-in., 3,625-ft. well he drilled to the Trinity strata for the town of Garland, Tex. A recent news item, carried by *The Dallas News,* told how the well pumped 1,000 gpm on test.

The deep well, Garland's fourth, relieved the town's water shortage which was so serious that it had forced residents to limit the water they used for lawn sprinkling and other non-vital purposes during the past summer. Garland has another Trinity sand well and two wells pumping from the 2,300-ft. Paluxy sand.

Woodruff Named

T. E. WOODRUFF, formerly manager of the St. Louis branch house pump department for Fairbanks, Morse & Co., has been appointed assistant manager of the pump sales division with headquarters in Chicago.

Woodruff has been associated with Fairbanks, Morse & Co. for many years.

Install

PLASTIC CORROSION PROOF SEAMLESS WELL CASING

in MINUTES instead of HOURS

CARLON PLASTIC WELL CASING for rotary drilled wells is rugged, lightweight and economical to handle and install. Standard seamless 20 foot lengths are furnished from stock in 3-, 4-, 5-, 6- and 8-inch diameters, light or heavy wall. Straight or swedged ends. Perforated Carlon Casing furnished when desired.

CARLON PLASTIC IRRIGATION PIPE for low pressure installations is best for dependable long life service. Easily attached cemented plastic sleeves and threads carried in stock. Acid and alkaline soils will not rot, rust, corrode or scale Carlon Pipe or Seamless Well Casing.

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The Driller & The Law

Well Contractor Wins Important Suit

A SOUTH DAKOTA city improperly refused to permit a well contracting company to complete its contract to drill and equip a well and thereby the town became liable in damages to the company. So decided the United States Court of Appeals in the recent case of Layne-Minnesota Co. v. City of Beresford, S. D., 175 Fed. 2d 161.

The principal point decided in favor of the company was that the city authorities had wrongfully deprived the company of its right to qualify for a bonus which the contract said should be paid if the well should produce more than a minimum 100 gpm.

MYERS
sales
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Sales Aces for
Every Driller!
Win good will — and watch your profits mount — by making a Myers Pump installation part of every well-drilling job. Myers backs you to the limit — with unbeatable products, unequalled promotion help.
Vertical type Ejecto for deep wells. Other types for every need.
TAKE OFF YOUR HAT TO
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THE F. E. MYERS & BRO. CO.

Another point involved in the suit concerned the company's obligation to leave test equipment in the well.

Contract Terms

The contract specifications in effect provided that if the well produced more than 110 gallons and less than 120 gallons, the contracting company should receive a 10% bonus on the contract price, and a 20% bonus if the well should yield more than 121 gallons. Corresponding deduction was to be made if the yield fell below 100 gallons.

The specifications called for installation of pumping equipment fitted to the capacity of the well, and a test made with *temporary* testing equipment furnished by the company showed that, although the pump bowl and motor were inadequate to develop the full capacity there was a flow of from 107 to 115 gallons. As provided for by the contract, the company called upon the City authorities to furnish specifications for the permanent equipment. This was refused and the City seized the motor which, with the bowl, had been removed from the well by the contracting company.

First Trial Favored City

In the company's suit, to determine its rights under the contract, the trial judge decided the case in favor of the City, but the Court of Appeals upset the decision and awarded damages to the company.

The City insisted that the company had promised to leave the temporary equipment in the well, but the Court of Appeals decided that the facts

were that the promise was made on condition that the City furnish specifications for the permanent equipment, which it refused to furnish.

One-Sided Contract Void

Furthermore, the court decided that "The contractor was under no obligation to leave the test equipment in the well, and its promise to do so if made, was void for want of consideration." (In other words, the contract did not require the contractor to leave the test equipment in the well, and therefore a later promise to do so, without the company getting anything in exchange for the promise would be a *one-sided* contract which the Law refuses to recognize as binding.)

As the company's right to a bonus, the Court of Appeals said: "The evidence shows that had the City permitted the contractor to proceed with the contract according to its terms, the contractor would have earned the contract bonus . . . Since the City made impossible the test of the completed installation required by the City engineer's interpretation of the contract, it cannot escape the payment of the bonus on the ground that the test was never made." *Arthur L. H. Street*

Artesian Wells . . .

(Continued from page 9)

Report of the Indiana Geological Survey published in 1873, Dr. Levette describes a flowing well, drilled on the state penitentiary grounds, that terminated in a porous stratum of the upper Silurian limestone. This well had a head of 22 feet above the ground and discharged at the rate of 300 gpm. The mouth of the well was 18 feet above the level of Lake Michigan, or about 600 feet above tide, which made the head 622 feet above tide. The trouble with this well was that it produced water

Profitable shallow drilling with . . .

Macwhyte Hi-Lastic's "built-in" elasticity allows tools to strike sharp, hard blows. It keeps the bit turning better . . . reduces tendency for the hole to get out of round and for the bit to channel. Like all Macwhyte's Wire Lines, Macwhyte "Hi-Lastic" Line is internally lubricated. Circular lists and describes all Macwhyte Cable Tool Drilling and Sand Lines.

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Get the correct line for your equipment from

MACWHYTE COMPANY

2939 Fourteenth Avenue, Kenosha, Wisconsin, or any authorized Macwhyte Distributor or Mill Depot

Pump Handle Pete Says:

Don't Know about Jensens? Write Today!

If we hadn't been a lazy race of people we'd still be carrying things on our backs and plowin' with a wooden stick—like they do in China.

As new things are invented smart folks get to know about them and use them—like the use of the small size Jensen oil field Pump Jack on water wells. In some places the Jensen Jack can't be beat! Our free literature tells all about where Jensens work best and how they save pumping costs. You can get your copy by addressing a card or letter to 1016 Fourteenth Street, Coffeyville, Kansas. Write today.

JENSEN

BROTHERS MFG. CO.

COFFEYVILLE, KANSAS, U.S.A.

strongly impregnated with sulphurated hydrogen.

In the USGS Water Supply Paper No. 21, Levette describes another flowing well on the side of the sand dune known as the Yankee Slide on the shores of Lake Michigan in the west part of Michigan City. The mouth of the well was between 40 and 50 feet above the lake level. Yet, water was obtained at a depth of only 12 feet.

Another well drilled in Michigan City for gas encountered fresh water in the drift at 210 feet which had a head of 15 feet above the surface. At a depth of 450 feet a strong flow of sulphur water was obtained from limestone.

Water Found at Shallow Depths

Near Lake Michigan, Kingsbury stated further, drillers frequently hit water at very shallow depths without reaching the bottom of the beach deposits. Throughout LaPorte County water-bearing sands and gravels appear as local deposits of limited extent. Clay, which is not so productive, is found between these deposits.

One peculiar thing about the Michigan City area, Kingsbury added, is that flowing wells occur both from gravel deposits and bedrock. The source of the hydrostatic head, he conceded, is a question. In the gravel it is probably from deposits in the aforementioned Valparaiso moraine which extends from the southwest to the northeast and is located south and east of Michigan City. In the bedrock it probably results from the normal trend which is to the north and northeast from the crest of the Cincinnati anticline.

Another peculiar thing about the flowing wells around Michigan City, Kingsbury concluded, is that they seem to occur in a limited area and appear less frequent and with diminishing head to all directions.

Drillers' Report . . .

(Continued from page 8)

total also includes rotary drill purchases.)

Approximate 1948 expenditures for wire rope (for all machine uses), according to 593 survey replies, were $154,849 or an average wire rope purchase of $261 per driller. Extending this figure to cover the entire industry, it is estimated that $1,681,884 was spent for wire rope alone in 1948.

Manila rope purchases, on the other hand, showed a steady decline. In the 1933 survey, for example, the average annual expenditure for manila cable was $160.47 per driller. Manila rope purchases (for all machine uses) reported by 593 drilling contractors totaled $35,953 in 1948, an average of only $61 per driller. Projection of this figure indicates that total manila rope purchases for the industry during the year were $393,084.

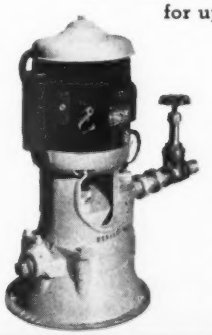
Casing — Pipe Rank High

Money spent to purchase well casing and pipe (used for water system installations) ranked high on the list of drillers' expenditures for 1948. A tabulation of the 585 replies received, representing a response of 10%, showed that drilling contractors spent $2,813,221 for well casing and $672,322 for pipe. This adds up to an average well casing purchase of $4,809 and an average pipe purchase of $1,149 per driller. An estimated total, covering the entire industry, shows that $30,989,196 was spent on well casing in 1948 and $7,404,156 for pipe.

Total strainer and screen purchases reported through 587 replies (10% of those queried) were $274,741, an average of $468 per driller. Projection of this figure indicates that expenditures for new strainers

Now you can sink a jet 300 feet down . . .
if it's a
BERKELEY
2-STAGE
EXTRA-DEEP JET PUMP
Promise your customers dependable performance from levels down to 300 feet

New jet design and higher motor speed—features of these new 2-Stage Berkeley Pumps—produce maximum performance with lowest horsepower requirements. The Berkeley Extra-Deepwell Jet Pumps develop higher pressures at shallower settings...are ideal for uphill pumping jobs.



Let us send you a table of performances for this new Extra-Deepwell Series. See for yourself how these BERKELEY Pumps can solve your customers' deepwell water problems economically and efficiently.

BERKELEY PUMP COMPANY

829 Bancroft Way, Berkeley 2, California

and screens totaled $3,015,792 for the year.

$78 Average for Jacks

Expenditures for jacks in 1948, according to 590 survey replies (10.1% response), totaled $45,985 or an average outlay of $78 per driller for new jacks. The estimated cost of all jack purchases made in the industry in 1948 is $501,632.

Finally, the amounts spent during 1948 for new drill tools were reported in 591 replies, a 10.1% response. Survey tabulations disclosed that drilling contractors spent $435,091 for drill tools during the year, an average of $736 per driller. The estimated total for drill tool purchases is $4,732,784.

This detailed summary of your answers regarding expenditures completes our tabulation of your reports on this important phase of the drilling industry. Your replies have enabled us to gather worthwhile information about the industry, information that should prove valuable to both drilling contractor and dealer alike.

Handy 'Andy' . . .

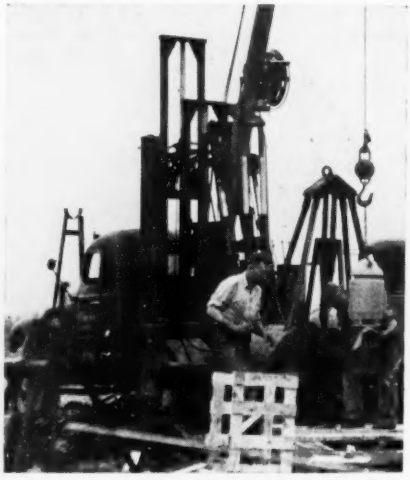
(Continued from page 7)

the jib extension on the boom, Anderson has been able to handle windmills up to 40 feet in height.

The crane is also used to put in vertical cylinder, pre-cast concrete septic tanks with 300-gal. capacity and weighing 4,100 pounds each. With his H-2, Anderson digs the excavations, unloads the tanks from trucks, and sets them in the ground. The average job takes two hours.

Ordinarily, Anderson does not use the drilling rig and the crane on the same job at the same time. Last winter, however, while putting down an 8-in. well, he used the Hydrocrane to swing well casing from a stockpile to the well, holding the casing in

• The crane holds the pump's hollow shaft motor steady prior to setting it on discharge head.



position until it was screwed together and ready for the tools to be dropped in for the driving operation.

Although expanded business and profits have been Anderson's with the Hydrocrane, he is quick to point out that a driller operating only one or two rigs would have to rely on "outside" jobs to make the machine pay for itself. Large-scale drilling contractors could profitably devote the Hydrocrane solely to well jobs, he believes. When his H-2 is not being used in well drilling work, he handles dozens of odd jobs with the machine.

He has dug numerous small excavations for house basements, city water mains, oil storage tanks, bridge abutments, and drainage ditches alongside highways. He has lifted roof trusses into place, set 20-ft. poles (6 x 6 in size) for temporary corn cribs, and placed electric building signs. He has unloaded coal from barges and pipe from railroad gondola cars. He has handled multiple miscellaneous crane jobs.

With his Keystone 70 mounted on

a 1½-ton 1937 Chevrolet truck and the Hydrocrane on a 1947 International KB-5 1½-ton chassis, Anderson has two mobile units capable of handling work within a 60-mile radius of Morris. His other pieces of mobile equipment are a 1939 Studebaker pickup truck and a 1½-ton 1941 Chevrolet. The latter unit is equipped with a dump hoist and is used for carrying away excess dirt on some Hydrocrane jobs, and for hauling casing and other well supplies to and from drilling sites. Ninety percent of Anderson's wells are put down for farm purposes, the remainder for suburban homes.

• Helper Bob Bergstrom, working in well pit, unfastens casing elevators from 3-in. column pipe which had been lowered into well.

Anderson finds he need not advertise the added service he has to offer in his crane-excavator. "People just don't like hand work," he says, "and they are especially allergic to digging ditches. Everyone around here knows I have the Hydrocrane and they know what the machine can do. Many customers even talk me into doing a complete job for them at one time."

MR. DRILLER:

DO YOU KNOW the superiority and reliability of the plunger type pump depends largely on the quality of sucker rods used?

MCDONALD RODS, tested and engineered for lasting stamina, *CARRY ON FOR YEARS OF RUGGED SERVICE*

For information as to Specifications, Prices, etc.
See your Dealer or Write Direct

MCDONALD LUMBER CO. Lawrenceburg Indiana

WIT BITS

Removing his shoes, he climbed the stairs, opened the door of the room, entered, and closed it after him without being detected. Just as he was about to get into bed, his wife aroused from slumber, turned and sleepily said, "Is that you, Fido?"

The husband, relating the rest of the story, said: "For once in my life I had real presence of mind. I licked her hand."

With six guns blazing, a gangster strode into the saloon and ordered: "All you dirty bums get outa here." Customers fled in a hail of bullets — except an Englishman who stood at the bar calmly sipping his drink. "Well?" snapped the gangster, waving his guns. "Well?" remarked the Englishman, "there certainly were a lot of them, weren't there?"

Judge: "You say it was an accident that you shot your wife? How did it happen?"

Prisoner: "She got in front of my mother-in-law just as I pulled the trigger."

She: "You look very downhearted."

He: "Yes, my wife has been away six weeks and she's just come back."

She: "And does that make you unhappy?"

He: "Well, I told her I spent all my evenings at home. Today the light bill came in . . . and it's only for 50 cents."

A lone baby chick, seeing an incubator full of unhatched eggs, said: "Well it looks like I'm going to be an only child. Mother's blown a fuse."

The man was disconsolate. Everything he did was wrong. So he decided to end it all by hanging himself from a tree. Before he jumped, he decided to explain to the Lord the reason for his action, and raising his head poured out the anguish of his soul—how he was blamed when things went wrong, how others got credit for his acts of merit, how his wife misunderstood him, etc. Just then, a bird flew over and beautifully decorated one eye of his upturned face.

"You see, Lord," said the poor soul. "That's what I mean. For other people they sing."

The bandaged drill operator who lay in the hospital bed spoke dazedly to his visiting pal:

"Wh-what happened?"

"You absorbed too much last night, and then made a bet you could fly out the window and around the block."

"Why didn't you stop me?" snarled the beat-up operator.

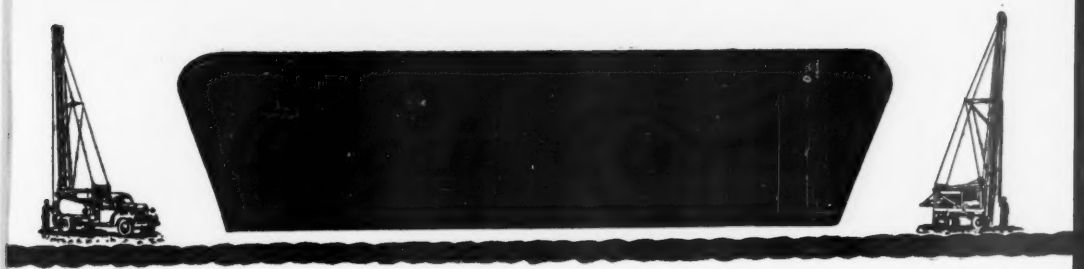
"Stop you! Why, man, I had $25 on you to do it!"

Manny: "Can you describe your assailant?"

Moe: "Of course I can. That's why he hit me."

Lawyer: "Then you admit you struck the plaintiff with malice aforethought?"

Defendant (indignantly): "You can't mix me up like that. I've told you twice I hit him with a brick, and on purpose. There wasn't no mallets nor nothin' of the kind about it—just a plain brick like any gentleman would use."



All advertising in this section is payable in advance. Enclose your check or money order with copy. Rate: 30c per line. Minimum charge $1.20. No discounts; no commissions. Count your own copy to avoid delay. The average line contains 28 characters (20 characters if all capital letters are used). Count spaces and punctuation as one character each. Allow 10 characters for box number if blind advertisement is desired. Closing date—10th of preceding month. Example — January issue closes December 10th. Be sure to address separate inquiries to each advertiser by using the correct box numbers. Mail Box inquiries care of THE DRILLER, South Milwaukee, Wis.

DRILLS FOR SALE

71 Speed Star, only drilled three wells. 40 ft. mast, casing reel, cat heads, ball bearing sand reel, other extras. Mounted on K7 International truck. Complete set tools 10-8-6-5. Light plant. 6¾#—8# casing. New 2-ton Ford truck, winch, oil field bed. Write or phone Paul Pierson, Longton, Kans.

Bucyrus-Erie 21-W well drill mounted on a 1935 Ford truck with 450 ft. ¾" new drilling cable and 475 ft. 7/16" sand line. Drill has LeRoi engine, 2 years old, in good condition. Priced for quick sale. Frank Acker, Hales Corners, Wis. Phone Hales Corners 288-W.

No. 40 Sanderson Cyclone spudder one year old. Excellent condition as good as new. It is mounted on an International one-and-a-half ton, 1937 — 157 inch wheel base truck. Truck in good condition. Rubber on truck as good as new. Price with truck, $2350. Less truck, price $2000. Box 323

DRILLS FOR SALE

One Bucyrus-Erie 21-W type D mounted on 1938 Chevrolet truck. The rig delivered new January 1946. Includes a complete string of drilling tools to drill four and five inch wells. Machine has approximately 350' good ⅝" drilling line and approximately 400' of good ¾" sand line. This equipment is offered for immediate delivery and is in A-1 condition. Price complete f.o.b. Johnstown, Ohio, $2500. Beinhower Bros., Mr. C. A. Beinhower, Johnstown, Ohio. Phone No. 130R.

Bucyrus-Erie 21-W complete with tools and cables. Mounted on practically new International truck. Working every day. $2000 cash. Call South Milwaukee (Wisconsin) 2-3230 or write Box 324, c/o The Driller.

Armstrong No. 35 drill with cable and drill tools. Completely overhauled. Price $1600. Laketown Well Drillers, 4604 South Whitnall Avenue, Cudahy, Wisconsin. Phone: Sheridan 4-0884.

One No. 40 Cyclone spudder, one year old. Excellent condition, as good as new. It is mounted on an International 1½-ton, 157-inch wheel base 1937 truck. Truck in good condition. Rubber on truck as good as new. Price with truck $2350. Less truck, price $2000. Box 321

Practically new, Bucyrus-Erie 22-W, type EB semi-trailer with dual pneumatic tires, mechanical brakes operated from cab, steel wheels on front with trailer bracket. Also the following variable equipment: 1 set rubber cushioned heel & spudding sheaves; 1 spooling device for bull reel; 1 casing reel with derrick head sheaves; 1 cathead attachment (dual catheads) including derrick sheave blocks. Complete with tools and cable if wanted. Write Armstrong Mfg. Co., Waterloo, Iowa.

DRILLS FOR SALE

Bucyrus-Erie 21-W, mounted on 1½-ton Fisher truck. Machine in good condition. LeRoi 4 cylinder gasoline engine. 300' each of ⅝" drilling cable and ⅜" sand line. Price: $1500. Box 320

One new No. 10 Ideco drill, 36 foot telescoping derrick, power hoist, spooling device, cat heads, and Red Seal motor. Can be bought with or without truck. Price reasonable. Write only if interested to Nic Prom, Cedarburg, Wis.

Kirk Hillman drill mounted on cat tracks; goes where truck-mounted rig can't go. New condition. Complete tools. New, all-steel trailer, two sets dual wheels, electric brake for highway moving; Lincoln portable welder for bit dressing and pipe welding on job; miscellaneous tools, etc. Sacrifice all for $4,000 or will separate. Write Box 87, Ely, Minn.

Used water well drilling machines. "Shurhit," Bucyrus-Erie and other makes. Write, wire or see them at the Burton Welding Company, G-4456 So. Dort Hwy., Flint 7, Michigan. Phone Shop 4-1483, Res. 4-7747.

Steel frame drill, similar to Bucyrus-Erie 23-P. 33 ft. telescoping derrick with Bucyrus-Erie rubber shock absorber and tubular braces. Machine mounted on 1939 Chevrolet truck. Machine and truck good condition. Operating every day. Reason for selling, too small for our territory. Write or phone Lyons Well Drilling Company, Stockton, Illinois. Phones: 205 or 388.

Bucyrus-Erie 21-W mounted on 4-Wheel Drive truck. Machine about 2 years old and in excellent condition. Also one 4x12 drill stem and wire line swivel socket with 2x3—7 API joints. Priced for quick sale. Call or write: Joe Mader, 4654 N. 29th St., Milwaukee, Wis. Telephone Custer 3-2520.

(continued on page 30)

DRILLS FOR SALE

(continued from page 29)

No. 71 Speed Star, semi-trailer mounted, 15 months old. A-1 shape. 40 ft. derrick, casing reel. With or without 6" and 8" drilling tools. Telephone or write—Harold E. Dorsey, Box 134, Ripon, Wisconsin.

One 35 Armstrong drilling machine mounted on good International truck complete with 6" tools. Price $1850 FOB Cincinnati, Ohio.

Three Bucyrus-Erie drilling machines 22-W. Trailer type mounting. All three are practically new. Price $3850 each without tools or $4250 each with complete set of 6" tools.

One Bucyrus-Erie 24-L equipped with spooling device, casing reel, 48' derrick with extra section for casing tackle. Mounted on extra heavy three-ton truck. Excellent condition. Priced reasonably.

Tools for sale: Bits, ranging in size from 24" down to 6"; trip pipe spears, size 16" down to 6"; pull rings, size 16" down to 6"; and long stroke jars and drilling jars, some new, size 2¾ to 3¾ with seven thread.

Right angle drive to pump water with gasoline driven motor direct with universal joints. Pumps up to 1000 G.P.M.

Two 40 H.P. electric turbine motors. One, 25 H.P. One, 20 H.P. One 15 H.P. Cheap prices on all these items.

Sixty 10' Armco iron screens. One 300 amp. Wilson gasoline welding machine. One 210' gasoline air compressor. Priced reasonably. Acme Well Drilling Company, 3201 Golden Avenue, Cincinnati — 26 — Ohio.

One 3½ Keystone machine mounted on Gilder truck, pneumatic tires, with or without tools, price $2000. Box 313

DRILLS FOR SALE

220 Howell Special, semi-trailer mounted with casing reel, cat heads and level wind. Machine is in very good condition and complete with all tools to go to work. Will take highest offer up to Dec. 1st, or will trade for a Bucyrus-Erie 22-W with same equipment.

Also 21-W Bucyrus-Erie mounted on International 1½-ton truck, will sell with or without tools and truck.
Box 314

One 1½ Keystone machine mounted on White truck, solid tires, with or without tools. Price $1250. Box 312

MISC. FOR SALE

For sale — new wrought iron pipe. (Subject to prior sale.) 18,000 feet 6" std. Byers plain end wrought iron pipe, specification ASTM-A72-33. Contact National Cooperative Refinery Association, Pherson, Kansas. Phone 820.

One 2-ton Hydrocrane with clamshell digging bucket, mounted on 1½-ton Chevrolet truck. Completely reconditioned, guaranteed. Ideal for digging slush pits, septic tank and cesspool work. For information in detail, contact J. P. Waite, Inc., 3304 W. Pierce Street, Milwaukee, Wisconsin.

NEW NAVY SURPLUS SALE
60 TON HYDRAULIC JACKS
60% OFF
WATSON STILLMAN MFGR.

Jacks ideal for casing pulling operations. Two pieces. Independent hand pump. Jack unit plus flexible copper. Pipe for safe operations.

List Price	$280
SALE PRICE	$112

BERKELEY DISTRIBUTORS, Inc., 16 Johnson Ave., Dept. D., Hackensack, New Jersey.

MISC. FOR SALE

Three sets heavy-duty cast steel tool wrenches for 4-inch square for use with jack. $40 per set F.O.B. Raleigh, N. C. Heater Well Company, Inc., 306 S. Salisbury St., Raleigh, N. C.

WANTED

Wanted to buy, Cyclone No. 14Jr. without tools, any condition, for spare parts. Must be cheap. Cash. Box 322

POSITION WANTED

Competent, reliable water well driller with best of references desires position in the Mediterranean area. Box 319

Wanted steady work by experienced driller. Foot or hour basis. Box 316

HELP WANTED

Experienced Drillers Wanted

Newly organized Brazilian subsidiary of an American well drilling company, specializing in large capacity wells, looking for first class drillers with only best of references to operate new 71 Star machines working both on hard rock and sand and gravel screen jobs using Johnson's well screen. Only top grade men wanted. Transportation furnished by air from U. S. A. to Rio de Janeiro and to job sites. Men with previous foreign experience desired. Salary $800 per month. Written applications only. Address communication to Commercial Drilling Company, Inc., 2036 East 22nd Street, Cleveland 15, Ohio.

Drillers Solve Crevice Problems

THE Nugent Brothers, drilling contractors from Edgewood, New Mexico, recently passed on to *The Driller* a suggestion they think might help some other driller to get through a crevice that won't hold water. In putting down a recent well, a troublesome crevice was encountered by their drill.

"We used everything we knew to hold water in the hole," the brothers said, "when, as a last resort, we ran about 10 gallons of used oil down in the bailer. The oil sealed the hole up so it held water, and in half an hour we were going good again."

The Nugents were down about 400 feet in a very loose, honeycomb sandstone when the crevice was hit. "The hole was so dry," they said, "that our tools came out hot."

Use

Acme Cable Tools

TRUSTWORTHY SINCE 1900

Fig. 265 Heavy Duty Collar Buster

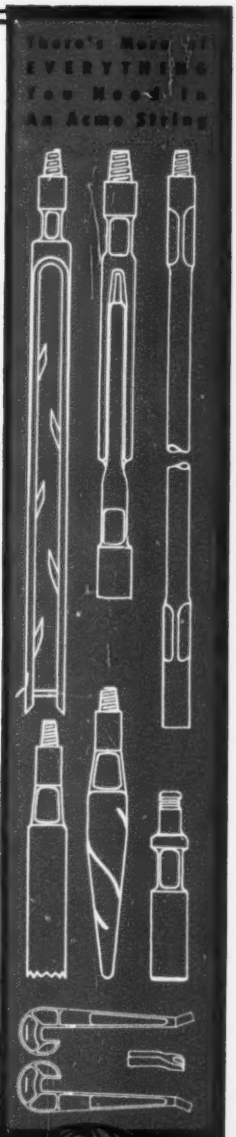
Part Pipe Quicker, Lessen Hazards .. Save More Pipe . . .

Acme's Heavy Duty Collar Buster parts casing QUICKER—than a Ripper—and assures greater SAVING of pipe . . . Quite an item these days, of costly, scarce materials!

Lower Buster to proper depth . . . raise until knife engages pipe-end, at coupling. Hitch on . . . apply pressure on casing . . . knife is forced to rip ribbon of casing out of collar, by few upward strokes of Jars. Knife turns over . . . you pull tools, then casing.

Pipe parted by Acme's Buster won't collapse on tools . . . Slight damage to collar . . . threads left in good condition for running steel nipple. Save that pipe!

Acme's half-century reputation—for invariable Trustworthy Tools—backs our Collar Buster. Knives of choicest tool steel. Uniform PREMIUM-quality steel . . . throughout . . . controlled by rigid analysis specifications. CORRECT heat-treatment, to electrical-automatic exactness.



If you don't have Acme's new Catalog & Manual—expressly compiled and chock-full of valuable information for Water Well Drillers—mail penny postal TODAY for your copy.

Fig. 265 featured above is one of 78 Acme TRUSTWORTHY Cable Tools shown in new Catalog for Water Well Drillers.

Acme Fishing Tool Co.

PARKERSBURG, W. VA.

ACME DRILLING & FISHING TOOLS Since 1900

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A journal for water well drillers

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